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PLAYGUIDE

NOVENIAN ALLIANCE STATE ARCHIVE

DRAZIW INDUSTRIES

Airborne Ground Attack Vehicle

Flight Operations Manual

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Introduction

Welcome to the Airborne Ground Attack Vehicle, the latest and most revolutionary of the new range of two-seater fighter craft designed and manufactured by *Draziw Industries*, Novenias leading armaments company for the past eight hundred years.

This manual is divided into chapters detailing most of the features of the AGAV. However, because of the unique flexibility of the craft's design, notably the ability to upgrade and modify the weaponry, control systems, and fuel-feeders without needing to rebuild the craft from scratch, you may need to refer to a number of addendum manuals, detailing particular upgrades. These are available from Section 1 9.e of the Novenian Alliance State Archive at Erkalon, or direct from your airbase Flight Commander.

You are reminded that this document is classified at Level 4.2, and is therefore printed on anti-Holostat paper. Any attempt to duplicate this manual will result in auto-decomposure of the complete document, and the simultaneous release of Kryplex gas, which will paralyse the nervous system of all known carbon based life-forms in the western spiral arm of the galaxy.

Yrag Draziw,
Chief Designer, Project AGAV.
Stardate 3429.6.81.

Entering the AGAV

To enter the AGAV craft, follow the standard procedure -

1. If the AGAV plasma drive is in operation, press the switch marked *OPEN CANOPY*, situated below the canopy rim (there is a switch on both sides of the vehicle). If the drive is inactive, release the safety catch and slide back the blister canopy manually, using the handles on the rim.

2. Climb onto the wing and stand as far forward as possible, close to the auxiliary oxygen port.

3. Place both hands either side of the rim of the canopy, and lift your legs over the rim into the cockpit.

4. Lower yourself into the pilots seat.

5. Adjust the seat until comfortable, using the posture control switches situated under the seat.

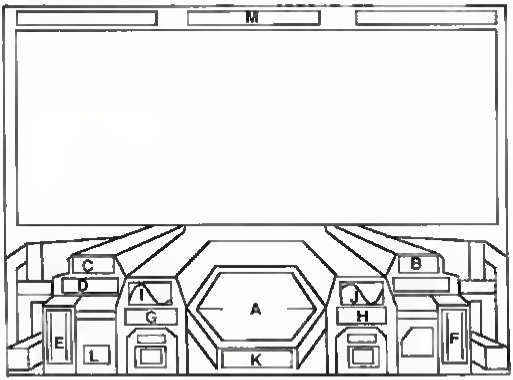
6. Fasten the safety harness.

7. Close the canopy by pressing the small green button to your immediate left (marked *CLOSE CANOPY*). If emergency power restrictions are in force, slide the blister canopy forward, using the handles situated just behind the pilot's seat.

The co-pilot or instructor should follow steps 2 to 7, standing slightly further back on the wing.

The AGAV Instrument Panel

Your AGAV has one of the most comprehensive computer control systems ever developed for a fighter craft. This means that the pilot only has to concentrate on the vital aspects of flying, such as navigation, combat, and docking at repair stations for fuel and extra weaponry.



The Instrument Panel consists of the following major instruments:-

A - LOCAL AREA SCANNER
This hexagonal screen displays the position of all objects within the AGAV's range. The scanner can detect density and movement extremely accurately, to the extent of sensing the colours of each building, vehicle or aircraft.

B - ENERGY LEVEL
This instrument shows a constant indication of how much energy the AGAV has stored for its Plasma Drive Unit. It is advisable to always keep the energy level above 15%.

C - SHIELD STATUS
The Molecular Neutralising Force-Shields should NEVER be allowed to drop below 10%, under any circumstances. Shields are replenished when the craft is repaired at a maintenance silo. The shields are at their weakest around the undercarriage, therefore it is important that you never allow

the AGAV to scrape along the ground during flight.

D - LASER CELL STATUS
All four *Sapphire II* laser units are fed from the laser cell. If it drains completely, your craft will be unable to fire laser bolts. The laser cell can be refuelled at any Novenian airbase or maintenance silo equipped with a PosiLok recharger.

E - ALTITUDE METER
The altitude meter shows your current height. If it gets below a safe level (usually 5%), the meter will flash rapidly and emit a sonic warning. You are reminded that it is an offence to fly low in a suburban area except in times of military emergency, unless you have clearance from your Area Commander.

F - VELOCITY INDICATOR
The velocity indicator displays the current air speed, up to 2550 urads.

G & H - BANK LEVEL INDICATORS
These twin indicators (one indicator is affixed to each wing-tip) display the level at which the AGAV is banking. The AGAV can bank to 45 degrees unladen, although cameras or missiles will alter the maximum banking angle. Both indicators should always display the same bank factor, unless one of the wings is severely damaged.

I & J - PLASMA DRIVE STATUS DISPLAY
These waveform display units indicate various internal values of the Plasma Drive. As an AGAV pilot, you need not worry about these unless they stop completely, or start moving in a reverse direction during flight.

K - SECTOR DISPLAY
The Novenian landscape is divided into 10,000 sectors, on a 100 x 100 matrix. The sector indicator will show the current X and Y position ranging in value between 00 and 99.

L - MISSILE INDICATOR
The missile indicator shows the number of missiles currently on board. The maximum number of missiles allowed at any one time is two.

M - HEADING DISPLAY
This instrument displays the heading of the AGAV in relation to the Irralya Star (discovered by Carndo Otnip in 2601.55.2) in accordance to the north, south, east, west convention.

Flying the AGAV

Please note that because there are a number of different AGAV models using a variety of pilot control mechanisms, you should refer to the specific flight control card which accompanies this manual.

Taking Off

Once all safety checks have been completed, you may take off using the following procedure.

1. Pull back on the control shoe to increase altitude
2. Increase thrust and accelerate forwards.

The AGAV has a top speed of 2550 urads, enabling it to outrun any sub light-speed Alliance craft, as well as all Egron and Aruloid military craft currently in service. It is quite safe to fly at full speed, as the computer will monitor the plasma drive at all times, and modify the neutron stabiliser automatically to ensure the plasma converter is always operating within its safe range

Flight Manoeuvres

If you have not had full training in one of Drazix Industries comprehensive flight simulators, you should familiarise yourself with the more frequent manoeuvres required by an AGAV pilot. One of the most important manoeuvres when attacking land vehicles and escaping reprisal from a nearby enemy is accelerating, banking and gaining altitude in one smooth operation. Likewise, when at high altitudes, it is essential that you are able to decelerate, change direction downwards, and accelerate towards an attacking enemy target as quickly as possible.

When flying at low speeds, the bank factor of the AGAV is so acute that you will be able to turn by 180 degrees with extreme ease. Even at maximum thrust, the turning circle of the craft is very tight. The quickest way to turn by 180 degrees is to decelerate to standstill, bank left or right to the AGAV's maximum bank factor, and accelerate quickly away

Landing the AGAV

The AGAV is fitted with all-terrain landing pads, enabling you to land on any surface, including molten lava, acid rock, and the vast Erialc fungi reefs

To land on a surface, bring the craft to level flight, and decelerate until the computer cuts in and holds you in hover mode at zero velocity. Push forward on your control shoe slowly until you touch down. If you are landing on molten lava, do not be alarmed by the loud hissing sound of the landing pads cooling the surrounding lava streams.

WARNING: During flight testing of the AGAV prototypes in the vast Tranalua desert, it was found that flying at extremely low altitude over an inductive energy powerline resulted in the absorption of small amounts of plasma energy. At the time, this seemed unimportant, but as the mk.1 AGAVs were brought into service in urban areas, where high capacity powerlines were more commonplace, the full size of the problem was realised. Daredevil rookie pilots, trying to prove their aerobatic prowess, decided that flying just above the ground at high speed between the twin towers at the beginning of a powerline and following the path until swerving to avoid the apex tower was a great test of skill. This resulted in large amounts of volatile energy being absorbed by the AGAV's energy storage pod, and subsequently overloading the neutron stabiliser and inflicting fatal damage to the plasma drive. Attempts to refuel in this way will result in severe action being taken by both the Novenian airforce, and the Plasma Energy Corporation against all guilty parties.

Weaponry Systems

The AGAV's main weapon is the *Sapphire II* quadpulse laser system. The laser is powered from a dedicated laser energy cell situated in the nose cone of the craft, directly behind the PosiLok refuelling nozzle.

Two laser cannons are situated under each wing of the AGAV, and each group of lasers fire simultaneously.

The AGAV has two laser sight operation modes. *fixed sights* ensures that the sight is always in the centre of the screen, requiring the AGAV to be directly in line with its target, whereas *floating sights* allows the sights to move freely about the screen in the direction of the control shoe movement.

The laser fire button has a rapid auto-repeat mechanism, enabling a target to be hit many times at great speed. The *Sapphire II* has an armour piercing factor of 0.45 - powerful enough to destroy a vehicle with similar armour to an Alliance tank with only six direct hits. The laser cell has a capacity for around 250 full-power laser pulses and can be recharged by a PosiLok station at any Alliance airbase, maintenance depot or silo.

Some AGAV's (mainly carried on Interstellar Exploration Fleet Dredgers) are fitted with short-range mk. 12 and mk 14 proton missiles. Please refer to the State Archive ref. "Supplimentary Weapons 94/2" for specific operation details.

As a desperate measure, and provided your shields are sufficiently intact, it is possible to intercept enemy craft and ram them if no other option is available. For this to be successful, the enemy should have little or no shield or force wall of its own.

Television Guidance System

The AGAV is fitted with a revolutionary new system. The VidiMon remote-controlled television guided camera.

Using a high-definition video camera, the AGAV pilot is able to transmit pictures directly back to Military Headquarters at Qazalon City. An automatic sliding visual display has been incorporated into the craft which monitors the flight of the camera.

The camera's flight is started by pressing the **LAUNCH** button on your keyboard console.

Once the camera has been launched, you can guide it using the normal AGAV flight controls (the AGAV itself will simply hover in its current position under computer control). The plasma drive should be able to transport the camera for at least twenty minutes. If the camera is not returned to the proximity of the AGAV within that time, or if it is intercepted by the enemy, it will self-destruct.

Docking and Maintenance Procedure

Routine maintenance checks are made on all Alliance craft, before and after every flight. The AGAV has a major overhaul after every five flights, or if any mechanical or computer related faults are discovered.

During a flight, if you need to refuel the plasma drive, laser cell, or replenish the shields you should establish a datalink with the nearest airbase and follow standard docking procedure. During a state of military emergency, or if the AGAV has been damaged and is in need of immediate attention, you may dock at an Alliance space station repair silo.

The Alliance silos are vast underground chambers with a sloping entrance building at ground level. The entrance hatch to the silo is marked by a laser strobe which is easily detectable by the AGAV's Enhanced Vision System. The silos are used to build and maintain all Alliance space stations and large military air vehicles, but also have facilities available for the AGAV. Not all space stations maintain geostationary orbit, so as they approach the entrance, the silo will rotate to face the space station using the NavSynch system, and then pull it in using its tractor beams.

The current docking procedure is as follows:

1. Establish a datalink with the Chief Engineer at the silo, and wait until clearance is given. The silo will rotate to face you, and then stop, unless you adjust your flight path. Manual flight into the silo is necessary, since the AGAV is too small to be automatically pulled in using the tractor beams.

2. Slowly guide the AGAV through the doors to the silo. Keep the AGAV central at all times, as hitting the door or a wall could result in major structural damage being inflicted upon your craft.

3. Once inside the silo, your Enhanced Vision System should alter your display so that only relevent sections of the silo are visible.

4. If you need to collect any new equipment, such as a replacement television guidance camera, or armaments for special projects (such as sonic bombs or Mk. 14 proton missiles), instruct the Chief Engineer to deposit the equipment at an AGAV collection point, which is usually situated near the centre of the silo.

5. When the equipment is ready, fly towards the collection point, where an AGRO unit will lock it into place on the AGAV's fuselage.

6. To refuel your laser cell, fly towards the end of the silo, and slow down to an almost stationary speed.

7 Align centrally with the PosiLok Refuelling Point, and fly forward until you lock into position. When your laser cell has been refuelled, the force shields will be replenished, and any superficial damage will be repaired by the AGRO androids.

While the AGAV is being prepared, you will be able to obtain food, liquid input, medical treatment, or a place to sleep in the recreation sector of the silo.

The Alliance Information Compufers are installed at strategic places in the silo, and provided you have security clearence, you can call up any military or local information that is available to the Alliance using the **Interrogate Silo Computer** option.

When the AGAV has been prepared, you will be escorted to the launch pad. To launch from the silo, wait until an AGRO unit has started up the plasma drive. When the drive reaches full power, press the button on the console marked **LAUNCH FROM SILO**.

Once you have launched from the silo, accelerate slowly forward, but do not try to increase altitude until your are clear of the silo.

AGAV Specifications

The main features of the AGAV are as follows:-

Plasma Drive

The retro-thrust plasma power units are a development of the Mk. 6 neutron fusiondrives which were used to great effect in the single-seater GS20 fighter class craft. They have been substantially redesigned to incorporate a neutron-stabiliser circuit, which has almost completely eliminated the spontaneous explosions occasionally experienced by unfortunate GS20 pilots who flew above plasma storms in the ionosphere, against the advice of their Atmostat data reports.

Molecular Neutralising Force Shield

These are the latest concept in shield technology and have been developed at great cost by the Irata University Molecule Research Unit
The shields work by fusing all unstable molecular structures into an integral part of the shield shell, therefore minimising the destructiva force of any solid matter coming into contact with the force shield The second advance in the shield design is in dealing with laser bolts, by converting laser anergy into sound waves This is a great improvement over the energy-thirsty fission based shields used on all previous Alliance units

Laser Cannons

The AGAV class craft retain the tried and tested *Sapphire II* laser system, which has been fitted with a new longer-lasting laser energy cell, using the new PosiLok cell refuelling system now installed at all airbases and outlying service depots The original duo-pulse unit has been modified to a quadpulse system for the first time to take advantage of these developments

Communication Systems

The standard issue military two-way radio system has been fitted to the AGAV A sub-etha data link, using the new NetCell cellular communication system developed by Novenia Telecom has been added for remote tracking, and other computer controlled operations.

Computer System

The AGAV is the first craft to have a ship's computer specifically designed for a single craft. Drazlw Industnes have worked in conjunction with Imperial Business Machines, to produce the P-CAT (ProtoIntelligence - Communication and TransProcessor). The P-CAT is the pilots main interface with the AGAV, and informs the pilot of the ships status at all times using its inbuilt SynthaVoice circuitry, message projection, and the ergonomically designed control panel instrument displays.

Because the AGAV has been designed as a low-flying attack and reconnaissance craft for use in unchartered landscapes, there is no computer controlled navigation system. The advantage of this decision is that in the event of the enemy gaining control of an airbase, they would be unable to control an AGAV remotely, or follow its exact flightpath.

*The P-CAT development team have been assigned to develop the computer control systems for the newly-announced Sentinal Defence Initiative (referred to as the "Sky Wars" program by the media), and will therefore be unable to produce updated versions of the P-CAT system in the future

Television Guidance Systems

One of the most important developments in the AGAV program has been the VidiMon system.

VidiMon is a remote-controlled television reconnaissance system, consisting of a high-definition video camera mounted on a miniature Plasma drive unit, a result of 15 years research at the Hibbard Technology Centre

The AGAV pilot can launch the camera on a surveillance flight, lasting up to 20 minutes A special control display has been incorporated into the AGAV which is automatically activated when the camera is launched

*N B. Although early tests using the camera mounted on a short range proton missile were unsuccesstul, the option is still available for the camera to be mounted on a lightweight remote guided weapon of some kind

Computer Enhanced Vision System

Probably the most spectacular feature of the AGAV is the enhanced vision system.

The greatest problem encountered by most attack craft in the past has been searching out tanks and armoured vehicles in built-up areas, in order to destroy them. Tanks can easily hide behind buildings or under bridges, and take pot-shots at fighter craft.

The blister canopy of the AGAV is actually part of a complex display system. Rather than looking at the outside world with standard infra-red goggles, the canopy actually intensifies the normal levels of background gamma and x-ray radiation, and enhances the edges of all solid matter to give a stunning translucent display of anything within its visual range, even if objects are behind solid buildings.

The inclusion of the enhanced vision system makes the AGAV the most potent seek-and-destroy craft ever developed for the Alliance.

Pilot Control Mechanisms

The AGAV is unique amongst modern fighter craft in its control mechanisms. The pilot (and co-pilot) manoeuvre the vehicle using the 'control shoe' situated to the right of the central computer console.

There is a secondary control system, used by the co-pilot or flight instructor, consisting of a keyboard module, with a smaller control shoe.

In the event of a control-shoe failure, the AGAV may be completely controlled from the keyboard module.

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